

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

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Applicant's or agent's file reference OP04-1091	FOR FURTHER ACTION		See Form PCT/IPEA/416
International application No. PCT/KR2005/000045	International filing date(day/month/year) 07 JANUARY 2005 (07.01.2005)	Priority date (day/month/year) 08 JANUARY 2004 (08.01.2004)	
International Patent Classification (IPC) or national classification and IPC A61K 31/00(2006.01)i, A61P 17/10(2006.01)i			
Applicant HWANG, Jae-Kwan et al			

- This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.
- This REPORT consists of a total of 4 sheets, including this cover sheet.
- This report is also accompanied by ANNEXES, comprising:
 - ☒ (sent to the applicant and to the International Bureau) a total of 6 sheets, as follows:
 - ☒ sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).
 - ☐ sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.
 - ☐ (sent to the International Bureau only) a total of (indicate type and number of electronic carrier(s)) _____ containing a sequence listing and/or tables related thereto, in electronic form only, as indicated in the Supplemental Box relating to Sequence Listing (see Section 802 of the Administrative Instructions).

4. This report contains indications relating to the following items:

- ☒ Box No. I Basis of the report
- ☐ Box No. II Priority
- ☐ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☐ Box No. VIII Certain observations on the international application

Date of submission of the demand 08 NOVEMBER 2005 (08.11.2005)	Date of completion of this report 21 MARCH 2006 (21.03.2006)
Name and mailing address of the IPEA/KR  Korean Intellectual Property Office 920 Dunsan-dong, Seo-gu, Daejeon 302-701, Republic of Korea Facsimile No. 82-42-472-7140	Authorized officer LEE, Mi Jeong Telephone No. 82-42-481-5601 

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/KR2005/000045

Box No. 1 Basis of the report

1. With regard to the **language**, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.

- ☒ This report is based on translations from the original language into the following language English, which is the language of a translation furnished for the purposes of:
- ☐ international search (under Rules 12.3 and 23.1(b))
 - ☒ publication of the international application (under Rule 12.4)
 - ☐ international preliminary examination (under Rules 55.2 and/or 55.3)

2. With regard to the **elements** of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report):*

- ☐ the international application as originally filed/furnished
- ☒ the description:
- pages 1, 2, 6-20 as originally filed/furnished
- pages* 3-5 received by this Authority on 08/11/2005
- pages* _____ received by this Authority on _____
- ☒ the claims:
- pages _____ as originally filed/furnished
- pages* _____ as amended (together with any statement) under Article 19
- pages* 21-22/1 received by this Authority on 08/11/2005
- pages* _____ received by this Authority on _____
- ☐ the drawings:
- pages _____ as originally filed/furnished
- pages* _____ received by this Authority on _____
- pages* _____ received by this Authority on _____
- ☐ the sequence listing and/or any related table(s) - see Supplemental Box Relating to Sequence Listing.

3. ☒ The amendments have resulted in the cancellation of:

- ☐ the description, pages _____
- ☒ the claims, Nos. 3, 6, 9
- ☐ the drawings, sheets _____
- ☐ the sequence listing (*specify*): _____
- ☐ any table(s) related to sequence listing (*specify*): _____

4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).

- ☐ the description, pages _____
- ☐ the claims, Nos. _____
- ☐ the drawings, sheets _____
- ☐ the sequence listing (*specify*): _____
- ☐ any table(s) related to sequence listing (*specify*): _____

* If item 4 applies, some or all of those sheets may be marked "superseded."

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.
PCT/KR2005/000045

Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims	1, 2, 4, 5, 7, 8	YES
	Claims		NO
Inventive step (IS)	Claims	1, 2, 4, 5, 7, 8	YES
	Claims		NO
Industrial applicability (IA)	Claims	1, 2, 7, 8	YES
	Claims		NO

2. Citations and explanations (Rule 70.7)

The following documents are referred to in this report:

D1: WO 88/03806 A1 (02. 06. 1988)

D2: EP 297733 A2 (04. 01. 1989)

D3: Phytochemistry, Vol.27(10), pp.3127-3129, 1988

1. Novelty

The amended claims 1, 2, 4, 5, 7, 8 of the present invention relate to a composition for treating acne comprising a macelignan compound represented by formula 1 and a method for treating acne using the said compound.

D1 and D2 disclose compositions comprising catecholic butane compounds and the use thereof in the treatment of disorders of the skin including acne.

D3 discloses that 1,4-diaryl-2,3-dimethylbutane type lignans have antibacterial effect against a cariogenic bacteria, Streptococcus mutans.

None of D1-D3 discloses that the macelignan compound represented by formula 1 is useful for the treatment of acne.

Therefore, claims 1, 2, 4, 5, 7, 8 of the present invention are considered to be novel over D1-D3 [Article 33(2) PCT].

2. Inventive Step

After the amendment, D3 seems to be the closest prior art since the macelignan compound represented by formula 1 is the same as 1,4-diaryl-2,3-dimethylbutane type lignan compound in D3 when R1 and R2 are hydrogens. However, the compounds in D3 are useful for the treatment of dental caries and a man skilled in the art wouldn't be able to expect that the compound of formula 1 can also inhibit the acne-causing bacteria from D3.

Therefore, the inventive step of claims 1, 2, 4, 5, 7, 8 can be acknowledged over D1-D3 [Article 33(3) PCT].
(Continued on the Supplemental Sheet.)

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.

PCT/KR2005/000045

Supplemental Box

In case the space in any of the preceding boxes is not sufficient.
Continuation of:

Box V.

3. Industrial Applicability

The subject-matter of claims 1, 2, 7, 8 appears to be industrially applicable [Article 33(4) PCT].

Claims 4, 5 relate to a method of therapeutic treatment. Concerning the assessment of the industrial applicability of the subject-matter relating to therapeutic applications, no unified criteria exist in the PCT. The patentability under national patent law can also be dependent upon the formulation of the claims [Article 33(4) PCT].